VISICALC®

POCKET REFERENCE

FOR THE TRS-80® MODEL III

```
D12   (V) +D3-B12+C12                                    C
                                                         17

       A          B          C          D       E       F
  1  PAYEE      CHECKS    DEPOSITS    BALANCE
  2  ------------------------------------------------------------
  3                                    545.20
  4  ELECTRIC     14.95
  5  OIL         102.15
  6  PHONE        36.00
  7  DENTIST      42.00
  8  SALARY                  395.00
  9  RENT        350.00
 10  GAS CARD     12.93
 11  ------------------------------------------------------------
 12  TOTALS      558.83     395.0     381.37
```

Manufactured for

Radio Shack®

ᴛᴄ A DIVISION OF TANDY CORPORATION

By

PERSONAL SOFTWARE INC.

Program by

Software Arts, Inc.

KEY FUNCTIONS

MOVING THE CURSOR

→ ← ↑ ↓   Moves cursor in designated direction. Used in value entry and some commands to point to an entry position that will be selected when ENTER or a colon is pressed. Move edit cursor in Edit Command (see /E).

;   Moves cursor between windows (see /W).

>*coord*   Go To Command. Cursor moves to designated coordinate. ENTER completes command.

CALCULATING

+   Addition

−   Subtraction

*   Multiplication

/   Division

SHIFT @   Exponentiation character ∧.

If coordinate is immediately to left of edit cursor on edit line, replaces coordinate with that location's current value. Otherwise places current value of cursor location on edit line.

!   When the edit line is clear, forces recalculation of entire sheet. When formula is on the edit line, replaces formula on edit line with its current value.

EDITING

BREAK   Exits command.

CLEAR   Edit cursor deletes one position. If edit line is blank, exits command.

SHIFT-
ENTER   Invokes Edit Command (see /E).

LABELS

Start with any letter or ''. The initial quotation mark does not appear on the edit line. Defines the entry as a label with the numeric value of zero. Labels are left-aligned in the entry position. Correct typing errors while entering with the CLEAR key or SHIFT-ENTER (see /E).

VALUES

Start with a digit (0 through 9), plus (+), minus (−), open parenthesis, period (.), number sign (#), or at sign (@). Values are stored with 11 to 12 significant digits. In general format, program shifts between conventional and scientific notation as required to display the calculated value to the greatest precision. If column is too narrow to display the number in scientific notation, greater-than signs (>) fill the entry position.

VALUE REFERENCE

Entry position coordinate used as element in a formula. Value references are allowed wherever numbers are allowed. To start a value entry with a value reference, begin with +.

FILE NAMES

A file name is one to eight characters beginning with a letter, optionally followed by /VC for a worksheet, /PRF for a print file, or /DIF for worksheet in DIF™ format. The VisiCalc program adds the suffixes /VC, /PRF and /DIF. Disk drive specified by final suffix :0 or :1.

FUNCTIONS

Provide common formulas for use in values. Each function begins with @ followed by the name of the function; most functions also require an expression in parentheses (the argument). An argument includes the values (formulas and numbers) upon which the function calculates. The arguments shown as *v* may be

any legal VisiCalc values. The arguments shown as *l* may be any logical values. The arguments shown as *list* may be any combination of values and ranges separated by commas. A *range* is a portion of a row or column specified by its beginning coordinate, a period (shown as an ellipsis), and its final coordinate.

@ABS(*v*)	Absolute value of *v*.
@AVERAGE(*list*)	Average of the non-blank entries in *list*. Maximum of 255 entries in *list*.
@COUNT(*list*)	Number of non-blank entries in list. Maximum of 255 entries in *list*.
@EXP(*v*)	Natural exponent of *v*.
@INT(*v*)	Integer portion of *v*.
@LN(*v*)	Natural logarithm of *v*.
@LOG10(*v*)	Base 10 logarithm of *v*.
@MAX(*list*)	Maximum value in *list*.
@MIN(*list*)	Minimum value in *list*.
@NPV(*dr,range*)	Net present value of the cash flow in *range*, discounted at the rate specified in the expression *dr* (discount rate).
@SQRT(*v*)	Square root of *v*.
@SUM(*list*)	Sum of the values in *list*.

TRIGONOMETRIC FUNCTIONS

All angles are calculated in radians.

@ACOS(*v*)	Arccosine of *v*.
@ASIN(*v*)	Arcsine of *v*.
@ATAN(*v*)	Arctangent of *v*.
@COS(*v*)	Cosine of *v*.
@SIN(*v*)	Sine of *v*.
@TAN(*v*)	Tangent of *v*.

SEARCH FUNCTIONS

@CHOOSE (v,list)	Returns the vth element of *list*. If v is greater than the number of elements in *list*, **NA** is returned.
@LOOKUP (v,range)	Compares v to the successive values in *range* and returns the corresponding value from the column or row immediately to the right or below the entries in *range*.

FUNCTIONS WITHOUT ARGUMENTS

@ERROR	Makes all expressions referencing the value display **ERROR**.
@FALSE	Logical value **FALSE**.
@NA	Makes all expressions referencing the value display **NA**.
@PI	3.1415926536.
@TRUE	Logical value **TRUE**.

LOGICAL FUNCTIONS

@AND(*list*)	**TRUE** if all values in *list* are **TRUE**, otherwise **FALSE**.
@IF(*l,v1,v2*)	*v1* if *l* is **TRUE**; *v2* if *l* is **FALSE**.
@ISERROR(*v*)	**TRUE** if v is **ERROR**; otherwise **FALSE**.
@ISNA(*v*)	**TRUE** if v is **NA**; otherwise **FALSE**.
@NOT(*l*)	**TRUE** if *l* is **FALSE**; **FALSE** if *l* is **TRUE**.
@OR(*list*)	**TRUE** if any value in *list* is **TRUE**, otherwise **FALSE**.

COMMANDS

/B   Blank – Erases the highlighted entry position. ENTER or arrow key completes command.

/C   Clear – Clears the worksheet, restores the General format and single window. Y completes command, any other key cancels.

/D   Delete – Deletes all the entries in the row (/DR) or column (/DC) on which the cursor rests.

/E   Edit – Allows editing of entry position contents. Places the contents of the highlighted entry position on the edit line. The left and right arrow keys ($\rightarrow$ and $\leftarrow$) move the edit cue over the characters without changing them. The $\uparrow$ arrow key moves the edit cue to the beginning of the edit line; the $\downarrow$ arrow key moves the edit cue to the end of the edit line. Enter or delete to the left of the edit cue. SHIFT-ENTER invokes the Edit Command while entering values and labels.

/F   Format – Sets local format for the highlighted entry position but does not affect contents in memory. Remains until changed or the worksheet is cleared.

       /FD   Default – Resets to the global format.
       /FG   General – Maximum precision.
       /FI   Integer – Integer.
       /FL   Left-aligned.
       /FR   Right-aligned.
       /F$ Dollars-and-cents (two decimal places).
       /F*   Graph – Replaces value with asterisks equal to its integer value.

/G   Global – Affects entire window or sheet.

       /GC   Column – Sets column width of all columns to specified number of characters. ENTER completes command.

       /GF   Format – Sets display format for all entry positions not specifically formatted. See /F for format specifications.

       /GO   Order of recalculation – Specifies whether the worksheet is to be recalculated down the columns (/GOC) or across the rows (/GOR).

       /GR   Recalculation priority – Sets recalculation to automatic (/GRA) or manual (/GRM). Typing ! causes recalculation.

/I   Insert – Inserts a new blank row (/IR) or column (/IC) at the cursor position.

/M   Move – Moves an entire row or column to another position on the sheet. The first coordinate on the edit line is the row or column to be moved. The final coordinate specifies where the row or column is to be moved. **ENTER** completes command.

/P   See "Printing."

/ –   Repeating Label – Fills the entry position with the designated character(s).

/R   See "Replicating."

/S   See "Storing."

/T   Titles – Fixes rows and columns in place on the screen so they remain in view when the window is scrolled. The position of the cursor determines which column(s) and/or row(s) to be fixed. The Go To command (>) moves the cursor into a fixed area.

       /TH   Horizontal – Fixes rows at and above the cursor.

       /TV   Vertical – Fixes columns at and to the left of the cursor.

       /TB   Both – Fixes columns and rows.

       /TN   None – Unfixes all rows and columns.

/V   Version – Displays the copyright notice and version number on the prompt line.

/W   Windows – Splits the screen vertically or horizontally at the current cursor position. The semicolon (;) moves the cursor from one window to the other. Global commands affect only the window containing the cursor.

       /WH   Horizontal – Splits the window just above the row with the cursor.

       /WV   Vertical – Splits the window just to the left of the column with the cursor.

       /W1   One – Returns to one window.

       /WS   Synchronized scrolling – Split windows scroll together.

       /WU   Unsynchronized scrolling – Cancels synchronized scrolling.

PRINTING

The Print command sends a rectangular portion of the worksheet to a printer or to diskette. Formulas are not sent (to print formulas and formats, see /SS). To print all or part of a VisiCalc worksheet:

1. Place the cursor on the upper-left coordinate of the rectangular area to be printed and type /P.

2. Type F to send to diskette file.

    Type P to send to parallel interface printer.

    Type R to send to an RS-232 interface printer.

3. To send setup codes, type ", the setup string, then ENTER. The following special characters can be used:

∧C *char*	Sends control *char*acter.
∧E	Sends the Escape character.
∧Hnn	Sends the single ASCII character defined by the hexadecimal digits nn.
∧R	Sends a return character.
∧L	Sends a line feed character.
∧∧	Sends one carat character (∧).

    The setup codes must be reentered each time the Print command is used. Invalid codes are sent to the printer – no error indication is given.

4. The VisiCalc program automatically sends a line feed with each carriage return.

–	Turns off the line feed.
&	Restores line feed.

5. Enter lower-right coordinate of the rectangle to be printed, either by typing it or pointing the cursor to it, and type ENTER.

BREAK stops printing.

REPLICATING

The Replicate command copies the entry contents of the source range (the position(s) to be copied) into the target range (the position(s) to which it will be copied).

A range is a portion of a row or column specified by its beginning coordinate, a period (shown as an ellipsis), and its final coordinate.

A colon separates the source range from the target range and is entered by typing either colon or ENTER.

	Source	**Target**
To copy one entry once	coordinate	: coordinate
To copy one entry several times	coordinate	: range in same row or column
To copy a row or column once	row or column range	: starting coordinate
To copy a row several times	row range	: range in same column
To copy a column several times	column range	: range in same row

ENTER completes command.

If the source range includes reference to other locations, indicate how each reference is to be treated:

N   No Change – Copies the reference as it appears in the source entry.

R   Relative – Changes the reference so that it is relative to the target position.

STORING

The Storage command writes a file to diskette, reads a saved file from diskette, writes and reads files in the DIF™ format, deletes files from a diskette, and quits the VisiCalc program. File names can be displayed from the diskette by pressing the right arrow key when prompted for file name.

/SL   Load – Loads a file previously saved with /SS. The file is loaded over the current sheet. New entries replace old ones. Any entries that are not replaced remain the same.

/SS   Save – Saves the information on the worksheet to diskette under the specified file name. To print out formulas and formats type /SS:P.

/SD   Delete file – Deletes the specified file from the diskette.

/SQ   Quit – Quits the VisiCalc program, and returns to the operating system. Y completes command, any other key cancels.

/S#S Saves the specified area of the worksheet to diskette as a file in the DIF™ format. R or ENTER saves by rows, C saves by columns.

/S#L Loads a file in the DIF™ format. R or ᴢNTER loads the information by rows, C loads by columns.

VISICA

ENTRY CONTENTS

ENTRY TYPE:
V FOR VALUE.
L FOR LABEL.
/- FOR REPEATING LABEL.

EXPLICIT FORMAT INDICATION

CURRENT ENTRY'S COORDINATES

ENTRY CONTENTS LINE — B9 /FI   (V) +B8*B7

PROMPT LINE — Value

EDIT LINE:
BLOCK MEANS
AWAITING INPUT
B8*B7█

ROW AND
COLUMN LABELS

	A	B		K	L
1	COST/SLS .8		1	RATE	.25
2	OVHD INC 10		2		
3	SLS GRW: .29		3	NPV	62.0
4			4		
5	YEAR	1981	5	TOTAL	%/S
6	-----------		6	-----------	
7	SOLD	100	7	3066	
8	PRICE	1.20	8		
9	SALES $	120	9	3680	
10	COST	80	10	2458	
11	OVHD	15	11	495	
12	PROFIT	5	12	118	

DOLLARS AND
CENTS FORMAT
(/F$)

LABEL ENTRY

CURSOR

TWO WINDOWS WHEN THE SCREEN IS SPLIT.

11

CALC ®

RECALCULATION ORDER INDICATOR:
IF R, ACROSS ROWS.
IF C, DOWN COLUMNS.

MEMORY INDICATOR:
HOW MANY K MEMORY AVAILABLE.
IF OM, OUT OF ROOM.
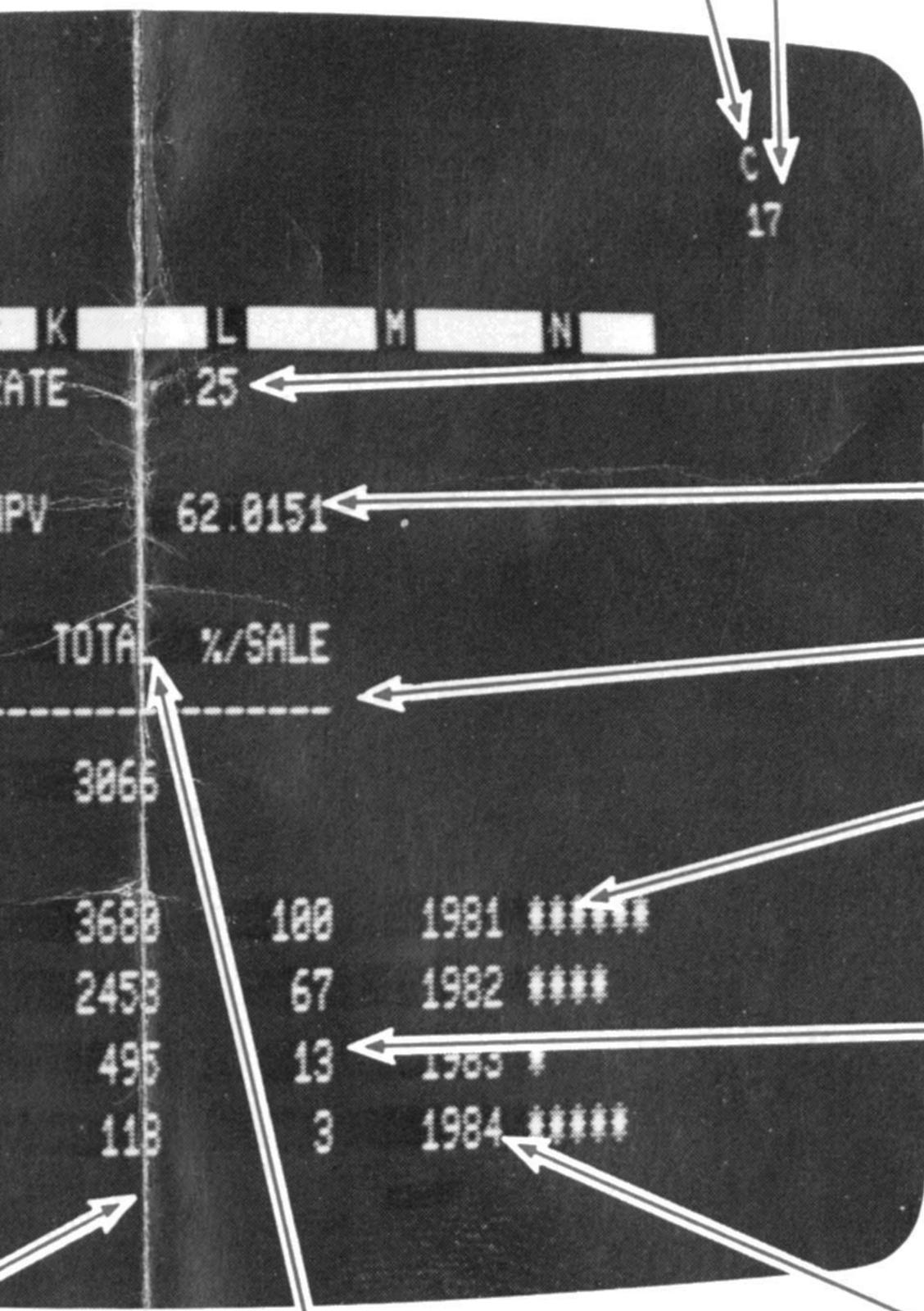
C
17

K   L   M   N

ATE   .25   ← LEFT JUSTIFIED FORMAT (/FL)

PV   62.0151 .   ← GENERAL FORMAT (/FG)

TOTAL   %/SALE   ← REPEATING LABEL (/-)

------------------- ←

3066

3680   100   1981 ******   ← GRAPH ENTRY (/F*)

2458   67   1982 ****

495   13   1983 *   ← VALUE ENTRY

118   3   1984 *****   ← INTEGER FORMAT (/FI)

RIGHT JUSTIFIED FORMAT (/FR)

12